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Original Lectures.

DIPHTHERIA.

A LECTURE DELIVERED DURING THE POST-GRADUATE COURSE IN THE HAHNEMANN HOSPITAL OF CHICAGO, FOR 1887, BY J. E. GILMAN, M. D., PROFESSOR OF PHYSIOLOGY, HISTOLOGY AND SANITARY SCIENCE.

Closely allied to one form of scarlet fever is that insidious and treacherous disease—diphtheria. The halo of antiquity covers the origin of the disease, and we may well consider this as one of the oldest of the plagues that scourge humanity. The description that the ancient physicians have given of its symptomatology are sufficiently clear and destructive to map out this as one of the disorders about which no question of its identity can be raised. It was known to Homer and Hippocraten (according to Oertel), and Galen describes it. With the knowledge we have of the history of epidemic diseases, and the modern history of this pestilential sickness, we can imagine in the surroundings and atmosphere of the earlier centuries how devastating must have been its ravages.

Thriving as it does on impure air, aided and abetted by filth and imperfect sewerage, the unfortunate people of the epochs, when such whirlwinds of destruction were hurled monthly and yearly over the land, must have regarded this disease with steadily increasing horror. There are numerous epidemics spoken of in the annals of those times. "A malignant form of angina raged in 1517 in Switzerland along the Rhine, and in the Netherlands in 1544, and in 1545 in North-

ern Germany and on the Rhine, in 1557 in France, Germany and Holland, in Naples in 1563 this spreading to Constantinople. Epidemics are reported in Dantzic, Cologne and Augsburg in 1565, in Paris in 1576, and from Spain several epidemics between the years 1583 and 1618, and among these as an especially fatal time was that of 1613, which was long known as the year of diphtheria (*le Anno de los Garotillas*). Those taken from the records of the times as an illustration exhibit the frequency of its visitations, etc. In the United States it somewhat antedates the advent of scarlatina, as the first recorded instance of its appearance is in the month of December, 1659, when Samuel Danforth lost the four youngest of his twelve children, by the malady of "bladders in the windpipe," and since that period the disease has selected its victims year after year in some portion or other of our country. In some seasons with a most malignant aspect, and in others with an easily controlled type, the disease has raged as an epidemic or in sporadic cases. The disorder is eminently one of early life, but it is by no means confined to childhood and youth, for it claims its prey among adults as well, but in much less proportion of number. By far the most susceptible age is that in which scarlatina is most frequently found. The disease appearing in the persons of children from one to fifteen years of age, and the greatest mortality is found between the ages of two and seven years. Like scarlet fever, those individuals of a marked scrofulous diathesis are the most ready to succumb to its virulence. In these cases there is a greater readiness for the virus to invade the glandular system, especially of the throat, causing inflammation and swelling of the lymphatics, and to thickly grow the exudation which forms in a dirty, grayish thick mat of membrane. This in its growth crowds out the vitality and destroys the functional life of the tissues upon which it is fastened. Of its intimate structural development this lecture may not treat, but of the essential nature and character of the virus the investigation properly belongs in the province of the sanitarian. Diphtheria is one of the list of contagious diseases. In some epidemics it is exceedingly contagious, while in others it requires an

actual contact to induce the new development of it in other persons. The direct contact of the diphtheritic elements, as they exist in the sputa and exudations from the buccal cavity which contains the virus in its primary vigor, and the absorption of these in the mucous membrane of others, is the sowing of the seed which develops into a new life and reduplication of the poison genus. Buhl, Huerter and Oertel in 1868 discovered that in diphtheria the tissues and membranous, exudation and exfoliations from them contained vast numbers of a bacterial form of the class known as micrococci. These are present in not only the throat and its immediate surrounding tissues, but they are found in the blood, in the general circulation, in the kidneys, in the general glandular system and in the muscles. As diphtheria is one of the diseases general in its action, that is, infecting the whole person and not simply local compared to the lesion in the throat, we should expect to find more or less of these germs throughout the general circulation, and therefore the presence of considerable masses and colonies of micrococci being found throughout these tissues and fluids, which we know exhibit symptoms due to morbid disturbances, would give color to the belief that these were intimately connected with the causation of the disease.

There is, however, an opportunity for an error here; micrococci are always found in septic conditions; they are present wherever there is decomposition of organic matter, and in diphtheria there is constantly present the chemical and physiological conditions forming their development as a result of rather than a cause of the disease. In stating this I do not wish to be understood as saying that the micrococcus described by these observers is not the absolute cause of the disease. It is not proven as yet, and this fact is simply to show a possible source of error in the recognition of the germ. The membranous deposit of the disease presents an admirable culture soil for such bacteria as may thrive under the conditions that exist on the mucous surface. As there are dead tissues kept at even temperature of a height most suitable for rapid growth, moisture is present, and a free exposure to such of the air germs as the constantly renewed air currents bring dur-

ing respiration. There is a difficulty also in distinguishing between the micro-organism which is present in the saliva of a healthy individual, and the same micrococcus that is credited with being the source of diphtheria. Von Granvogl, in 1867, advanced the theory that the diphtheritic membranes consists of *ferment* cells and microscopic fungi almost or quite identical with the mould which grows on bread. Prof. Hallier of Jena, was the first to discover the presence of the fungous growth. These growths taking root on the mucous surfaces penetrate them, and multiplying, compress the minute vessels to an extent to destroy the circulation and induce a lowered vitality or the death of the part. Other observers corroborate this. "Ewart and Simpson consider the pathogenic organism of diphtheria to be a minute spore which develops into long, slender bacilli upon the surface of the tonsils, etc., when for any reason they are denuded of their superficial epithelium." While Litzerich takes the same view as Grauvogl, that it is a true fungus growth, and Sternberg has observed and photographed the mycelium and groups of spherical bodies which seem to be spores of a fungus of this nature. Whether the essential germ of the disease is a micrococcus or the fungus with the microbe following in its train as the result of decay of animal tissue, is not yet decided. The micrococcus described by Ebarth, Oertel and Ewart, morphologically, according to Sternberg, is identical with similar organisms which are found in the fauces and buccal cavity of individuals suffering from scarlet fever, and in fact when ill with no disease at all these organisms are also present. In this latter case it is fair to infer that they exist by reason of the decay of the particles, of food or other organized material in the mouth. It does not necessarily follow that because they do exist as identically the same so far as we can tell, that there is no radical difference, for there are organisms that have the self-same form and general appearance, yet they may have pathogenetic properties or be harmless.

I think, taking the evidence of all observers into consideration, that the germ of the disease takes its lodgment in the mucous membrane of the throat and tonsils, that it is a fungus

—a parasitical growth which takes root and grows there. In its growth it furnishes the nutrition for bacterial growth which takes the form of septic micrococci. These microbes, as part of their life work, generate a virus of a chemical nature, and this poison it is that produces that innervation of the system that is the cause of the exhaustion and paralysis that is the so frequent cause of death. That the spores of the fungus find entrance into the blood there can be no doubt, for in a person ill with a prolonged or severe type of the disease a cut or wound on some remote portion of the body exhibits the characteristic exudation, and in the internal organs it is also found. In giving birth to vast numbers of the micrococci from death and decay of tissue, with the ready entrance to the blood vessels due to the denuding of the tissues by the local destruction through the agency of the fungus, we have the origin of the secondary poisoning which distinguishes the severer forms of the disease from those more nearly local in the development, and when these bacteria find ready entrance in large numbers, in the organism the greater quantities of active poison of a chemical nature is evolved. This it is that causes such morbid changes in the kidneys, the heart and the nervous system, and in its depressant action on life extinguishes it as is seen in death from the development of ptomaines without diphtheria. In very mild types of diphtheria we may have a resulting paralysis, due to the absorption of but few microbes, the initial point of the rooting of the fungus having been speedily obliterated, but not speedily enough to prevent the entrance of a sufficient number of the micrococci into the blood to generate the causative virus or its absorption through the injured part of the throat. Taking all the phenomena of the disease known to me, each one and all are plainly accounted for with this view of the growth and development of the fungus, and the accompanying and subsequent absorption of septic micrococci. The conditions which favor the development of the disease, and increase its intensity, are identical with those which are necessary to fungus life. Illy ventilated localities, in which there exists quantities of decomposing animal and vegetable substances, in damp, dark,

moldy dwellings, or as well in well lighted and luxuriously furnished dwellings over a stopped up drain or overflowing catch-basin where the animal substances fester and decompose, undisturbed by atmospheric currents, and the spores are drawn upward into the apartments above. These are the conditions necessary to the fungus vegetation and its introduction into dangerous connection with human life. We can well understand the vital connection that exists between the development of the virulent types of diphtheria and the presence of severe exhalation and piles of organic matter in a stage of decomposition.

Illustrating this, in a costly house in a choice residence part of Chicago, diphtheria appeared, and in a few days had swept out of existence two children, and two others, all that remained, were ill with the disease, with that severe form which means speedy death. As one after another case was reported to the health department, the commissioner sent a special inspector to the house to discover the origin and cause of so many cases and its virulent action. The gentleman who occupied the house told the agent of the department that the drainage of the place was all in order and discouraged the inspection of it in detail. Our laws give the sanitary commissioner, however, an arbitrary power to investigate to the fullest extent the condition of any or all rooms used for human occupancy, and with the unwilling assent of the owner finally gained, the flooring in the basement was taken up, revealing a sickening mass of excretion and house refuse, the collection of the two or three years since the buildng was erected. A stick thrust in this disclosed that the filth was from one to two and a half feet in depth, and was due to the fact of no connection ever having been made with the catch-basin and the external drains. Within a half-hour the terror-stricken man removed his poisoned family from the premises, and out of the reach of the pestilential miasm which possibly generated, certainly aggravated the virulent disease which had cost him so dearly. The health records of Chicago contain the names and residences of all persons whose death from any cause is reported. Mr. G. P. Brown, taking these re-

ports, collected all the cases of death from diphtheria in a certain district, and investigated the conditions of the premises wherein the case occurred during the summer of 1879 and winter of 1880, with the view of determining the connection between this disease and sewer emanation, and these records show a melancholy sameness of causation. Let me give you one or two of them taken at random as illustrative of this point.

"*Case* 1.—M. E. P., North Clark Street, a once bright and robust boy, eight years of age. The lad had been afflicted with sore throat for some time, but no danger was apprehended until the day before his death. Another son three years older was afflicted in the same manner, and lay at the point of death when the writer called at the house. Later the lad improved, but the physician said he might decline at any moment and die. Mr. P. moved into these rooms nearly two years previously. They then had four children. Very soon it was noticed that they all became very thin and pale, and grew languid and listless in their movements. In less than a year the youngest, a baby, died. Three months afterward the next eldest fell a victim and was put to rest in the cemetery. Neither the family nor the physician suspected any unusual cause for the sickness and deaths. The family had all been strong and healthy before moving to their present quarters, and had taken the utmost pains to preserve their health. When finally the attending physician, who could not account for the speedy and fatal action of the disease, said there must be something wrong about the drainage of the house, the family remembered that they had been greatly annoyed by the most horrible smells at times, which came from their sinks and water closet. A health officer was sent to the place, and he found the odors complained of to be from sewer gas. Mr. P. stated that the odors had become so obnoxious on the first floor that he was compelled to stop the pipes leading from a sink in the rear part of the room, and discontinue its use."

"At No. —— South Union Street, a boy aged eight years died of diphtheria December 31. His parents occupied the rear rooms on the first floor, and their kitchen sink emptied into a wooden drain leading into a catch-basin. The waste pipe was without a trap."

"*Case* 2.—At No. —Will Street, Jane A. Craty, twelve years old, died of diphtheria on December 21, after a sick-

ness of ten days. She had been at school, but so far as known the disease was not transmitted to her by contagion. She had been complaining of exhaustion for several days, and could not eat a proper amount of food. She had received permission to stay at home and rest when she came home from school Friday night, but on the following morning her throat was sore. The same day an older brother was taken with diphtheria and compelled to quit his work. The boy lived but the girl died. Another girl was sick in bed with the disease when the house was visited, but she was expected to recover. A fourth child was not afflicted at all. The house was an old one, two stories high, and not connected with the street sewer until about two weeks before the sickness occurred."

I will epitomize one more case from the same source:

Case 3.—Mr. E. W., Clybourn Avenue lost four out of five children in two weeks. One six years old and one four years old were taken September 8 and died—one in two days, the other four days later. September 10 the baby, sixteen months old, sickened, and died three days after; and the last one, two years old, four days after. Investigation disclosed the very apparent reason for the deaths. "The privy, used in common by eight families occupying the house, was a two-story structure and stood in a small court between front and rear divisions of the building. The contents of this were supposed to run through a drain to a catch-basin and thence to the street sewer. This drain was found to be clogged, and the filth in the privy vault could not escape; as the vault filled the contents worked back into a drain, which connected with the down spout from the roof—a pipe which carries off the roof water—this did not have close joints, and the result was, that it permitted the filth to ooze out upon the ground. It is not known how long this was going on, but the earth in the court, into which it soaked, was saturated with the waste to a depth of more than two feet. More than two tons of filth, which had been giving off its foul and destructive odors to rise and enter the windows and doors above, were finally removed. The people had suffered exceedingly at times from the annoyance, and yet the privy waste had so soaked away in the soil that they did not suspect the source of the trouble. It is doubtful if the offensive emanations from this filth can be connected with the disease which invaded the family, so much as the sewer gas which escaped into their living rooms through the kitchen sinks. The waste pipe, which extended from the sink to the main drain under the house, had no trap

in it nor was there any trap in the drain itself, both were also unventilated. The gas generated by the decaying sediment adhering to the inner surface of the waste pipe and drain was nothing else but sewer gas. The family said they had suffered greatly from the foul odors which came from the sink. The children, first attacked, slept in a bed room adjoining the kitchen, and a small window afforded communication between the two rooms."

There are many of these cases reported in full, and all of them show this condition of foul emanations from the sewer or slowly collecting pile of refuse. In the Brown School, in a choice locality of the West Side of our city, an epidemic of diphtheria broke out in the winter of 1884–85; there were a considerable number of cases developed in the neighborhood, all pupils of the school, and several died. Many parents removed their children from the school, and finally it was closed for repairs. A complete inspection was ordered and it was found that, underneath the building, pipes which connected with the sewer had been cut off and bent over, but not sufficiently closed to entirely break off the sewer atmosphere from escaping. The air from this space contaminated as it was drawn up in the rooms for the use of the hundreds of pupils in the apartments above, but this was not the worst of it; owing to a faulty construction of the system of ventilation the air from one room was carried into another and with all of its added impurities of exhalations from so many individuals, then rebreathed and still additionally contaminated, and still further was this disseminated to a greater or less extent through other rooms. Here was the fruitful soil for the cultivation of very vigorous disease germs, and the type of the disease was of that character. As soon as the health department was made aware of the existence of the disorder the school was closed, the investigation made and the cause removed. This ended the epidemic.

Diphtheria is a disease that is especially liable to be conveyed by direct communication. That is if the saliva comes in contact with the mucous membrane of an individual previously healthy, it is a serious matter for the spores of the fungus are then easily implanted. A kiss from a person with

a sore throat of diphtheritic character will impart the disease, and it may be then a kiss that betrays to death. Even a light sore throat may be the cause of communicating a severe type of diphtheria to another one in a receptive condition to the disease. So as a precautionary measure the promiscuous kissing of children should be discouraged, especially in the presence of an epidemic of the disorder. I have known of several cases in which I was satisfied the disease was conveyed in this manner. The secretion from one sore throat coming in contact with that of another one will in some instances seem to add a considerable vigor to the disease, and cause a general development of diphtheria in one or both individuals. In such cases there must undoubtedly be the diphtheritic germ implanted, but, possibly lacking in vigor, until the impregnating union of lips to lips occurred, then the one acting upon the other causes a vitality to be generated, which makes it virulent in action. Another source for the spread of the disease is in the use of utensils from the sick room or employed by individuals with a mild type of the disorder. These vessels should not be again used until exposed to the action of boiling water. The *Sanitary Engineer* reported as follows: "It will be remembered that a good deal of prominence was given last fall in the papers to the occurence of diphtheria in a family in Amsterdam in New York. Two children died at intervals of several months, and a third was taken sick. The board of health appointed a committee to investigate, which examined the house and its surroundings, and obtained a statement from the attending physician. They have recently made their report finding that there were no bad conditions existing in or about the house sufficient to explain the appearance of the disease and conluded that it came from a cat that was fondled by the child who first fell ill.

"This cat was found at the time to have a swollen throat, and to be suffering from a discharge from the mouth and nostrils. It died a few days afterward. Three days after the death of the cat the child fell ill with a malignant diphtheria, and died in about a week. During its illness it played with a

doll, which was afterward given to a younger child, as it was supposed to have been properly fumigated with sulphur fumes. This child shortly after being allowed to play with the doll also fell ill with diphtheria and died. The third child also played with the doll and fell ill but recovered. The board of health therefore traces the reappearance of the disease in the family after the death of the first child to the doll. This example points out two other methods of dissemination of the disease. One through the agency of the toys and articles handled by the sick one, and the other by means of contact with an animal ill with the disorder. That it is a disease which infects animals and birds there is no doubt. Domestic fowls have had it. Vicati reports the cause of an epidemic among hens occurring at the same time of an outbreak of diphtheria among the inhabitants of Marsuller. Gerhardt reports that 2,600 hens were imported from Verona, Italy, into a village near Baden. Some of these hens were affected with diphtheria when they arrived: within six weeks 600 of them died with diphtheria, and 800 more soon after. In the following summer 1,000 chickens were raised by artificial breeding, all of which died of diphtheria within six weeks. Five cats kept in the place also died of the disease. A parrot fell sick with it but recovered. Four of the six workmen employed in taking care of the hens in the establishment, were taken with diphtheria. Not a single case occurred in the village. Thus it is safe to say that the diphtheritic disease of hens can be transmitted to man. In Ogdensburg, N. Y., five children were ill with diphtheria. Three kittens which had been playing with them from time to time took the disease and died. Post mortem examinations showed diphtheritic membranes in their throats. I recall a case of direct infection of an infant with the disease from a cat. This was a hearty, robust infant of six months of age, a perfect picture of health. Another brother brought in from the street a sick waif of a kitten, too ill to run away from strangers. The infant was recumbent on cushions on the floor. The boy placed the kitten by the infant to amuse it, baby like the child grasped the tail, and put it in its mouth. The hairs came out readily, and when the mother came into

the room she found the mouth coated with the fur. In half an hour the child began to show signs of illness, and the next day the type of the disease was determined. This was a severe case, the whole of the mucous surface of the fauces involved, great swelling of the glands, gangrenous degeneration to such an extent that particles of the soft palate were destroyed (in one place a hole through the veil of the palate large enough to pass a marrofat pea). The child finally recovered after many days of very anxious watching. Oertel says that during the first six months of life, there is no susceptibility to the disease. This, and one other case of an infant under six months, have come under my notice. Milk also may serve as the carrier of contagion, most probably through the deposit in it of the disease product in sufficient quantities to infect the throats with which it comes in contact. Possibly there may also exist in milk a direct infective material generated through a diseased condition of the animal itself, of this however there is no convincing evidence. It is, however, a subject that should not be overlooked in the search for the origin of an outbreak. (That it is conveyed in the milk I have already spoken in the lecture on scarlatina). According to Jacobi on a Pomeranean form in 1875–76, every newly born calf died of diphtheria, and the superintendent of the farm, and the woman who attended the calves were taken with diphtheritic anginosa.'' It would in such a case be quite a possible thing for the milk to be the means of conveyance of the disease to human beings using it.

From these instances for practical use we can draw the deduction that diphtheria is a contagious disorder through immediate contact, with the exhalations discharges, etc., from a patient ill with the disease and in a lesser degree by contact with emanations through the medium of air and water.

Being a contagious desease it is a preventable one, especially in epidemic form, and when we consider that in some years ''it causes more deaths than typhoid fever, small-pox, scarlet fever and measles combined'' (Chicago health department circular diphtheria), it is a subject that deserves our careful consideration. For instance, in 1880 out of every thou-

sand deaths from all causes in the United States 51.33 were due to this cause, while in the State of Illinois, in 1882, 51 in every thousand deaths from all causes occurred through its agency. There can be no doubt of the readiness of transplantation of the fungus growth by actual contact. There are also many cases on record in which the disorder assumed an eminently infectious nature, and was disseminated through the air to some distance from the individual. I have never seen, however, any cases in which the possibility of the communication of the disease through direct contact had been so guarded against as to permit the possibility of this being the only means of its spread. I attended a case where a child had lain ill with the disease until gangrene had supervened, and had slept in the same apartments with five other children of susceptible age for two weeks without infecting any one else. The fetor was horrible. I saw the child but a few hours before its death, and could hardly endure the odor long enough to make the necessary examination. Here was a case of close contact of a family living in the three rooms, and sleeping, eating and living in close contact—perhaps not exactly touching the diphtheritic patient—yet no one else contracted the disorder. Such cases as this serve to cast a doubt upon the extent to which the contagion is active at a distance. As a practical measure, however, it is well to bear in mind the possibility of contagion extending through the medium of emanations from the individual to a greater distance than is compatible with direct touch, and avoid the draughts of air from the sick person or the breath of a diphtheritic person coming too directly toward one, when there is any catarrhal or inflammatory condition of the throat of a chronic type of a readily excited character especial care should be exercised. For the rupture in the continuity of the mucous covering of the throat affords a ready foothold for the spores or germs of the disease to locate, and such persons should avoid coming near any diphtheritic patient, and if the disease is at all prevalent should, at the advent of any increase of the trouble, at once consult a physician and receive such treatment as is necessary in the premises. Those individuals of a scrofulous diathesis

or subject to glandular enlargement are very unfavorable subjects. Children particularly and most of all those within the age limits meantime should be at once removed from any house wherein the disease breaks out. Anything which tends to lower the standard of health and exhaust the individual predisposes to the disease. Not unfrequently a continued exhaustion from some cause or other is the precurser of a rapidly fatal form of the disease. And one of the most effectual methods of producing this condition of weakness and sense of contagious fatigue is the exhalations of air contaminated with sewer-gas. While the gas is not the actual cause of the disease it paves the way for its invasion; it serves as the pabulum to increase its virulence and vastly lessen the chance of recovery. Air loaded with exhalations from the bodies of human beings closely packed together in crowded gatherings in illy ventilated rooms lowers vitality and produces that feeling of lassitude and innervation which makes easy the advent of the disorder. Children being especially liable to the disease should be kept away from assemblages in churches, halls or school buildings if the disease is rife. Better do without the school advantages during periods of diphtheritic epidemics than risk contact with a disease so extremely fatal to children.

At all times the condition of the sewerage and house drainage should be carefully looked after, that its contaminating influence in the spread of the disease may not be manifested. We should impress upon our patients the importance of calling upon the doctor at once for aid and council if the preparatory weakness comes on, or if there is sore throat of even a slight character with foul breath or some fever. The disease is like a fire, which may be extinguished in its early stages, but if allowed to gain headway overleaps all control. So important is the rule that it cannot be too strongly urged and impressed upon the minds of the community at large. The earlier the physician sees a case of this character the greater chance he has of preventing the secondary invasion of it or the spread of its exudative growth. Of the remedial agents, I leave that to the Professor of Theory and Practice, but would like to add

one or two suggestions of remedial auxilary measures, and one of these is the use of pepsin. Where a tissue is so far destroyed that gangrene is impending or actually begun, pepsin powders, frequently repeated, applied locally, will, by its digestive action, remove the tissue from which the life is gone, and so it will keep the parts clean and free from danger of septic poisoning from absorption of virus from decaying and gangrenous tissue. It is a precious expedient, and must be somewhat frequently repeated. On live tissue it will have no effect. On the membrane itself it will have little or no effect while it is vigorously growing, but it will remove speedily the dead material. In these cases, also, the use of local disinfection, such as eucalyptus, permanganate of potash, kali chlor, phenic acid, sulphate or perchloride of iron solution, alcohol and camphor are necessary, and if the nasal passages are invaded, the injection of a solution of two or three grains of kali permanganate and twelve or fifteen grains of kali chlor in a tumbler of water, frequently repeated, is desirable and frequently indispensable.

The same general attention should be given to the selection and care of the room as detailed to you in the lecture on scarlet fever. In the matter of diet there is an essential difference between this disorder and scarlet fever. In this disease exhaustion is the tendency. It comes in persons who have had a previous condition of weakness most virulently, therefore the diet should be of an extremely nutritious and stimulant character, when the patient can take it at all. Alcohol is a substance that may be used in the severer cases with great profusion and recklessness almost. I have given to a patient one drachm of absolute alcohol every hour for forty-eight hours consecutively without producing any toxic effect, and this to a lady who was also saturated with the alcoholic spray during the whole period and who would have been overcome with two doses if in perfect health. Often there is not only a loss of appetite but absolute repugnance to food. When this is the case, concentrated foods are necessary with the whisky, brandy, or diluted alcohol accompaniments. The use of nutritive enemas is required when the paralytic condition of

the throat interferes with the swallowing of the food. I have in this way kept alive a patient with past diphtheritic paralysis for two weeks, during which time no food entered the stomach. As a means of dissolving the membrane, the fumes of vinegar have been highly extolled. If this is used (and I have been well satisfied with it), it is prepared as follows: A bowl of vinegar is placed over an alcohol lamp and slowly evaporated in the room of the invalid, so that the air is saturated with the vinegar vapor. It certainly retards the growth of the membrane and facilitates its removal. Slaking lime has also been used with good effect, especially in the form of croupous diphtheria.

Relapsing herpes of the tongue in syphilitic subjects. —In a clinical lecture by Fournier, published in the last issue of *La Semaine Medicale,* this subject is thoroughly discussed. The lesion is described as consisting of small erosions which are multiple and disseminated, ephemeral and relapsing. They occur in syphilitic subjects, and are aggravated by the use and abuse of mercurials and tobacco, just as the genital herpes described by Doyon is reproduced by irritation of the sexual organs. Since this affection is truly herpetic, although post-syphilitic, Fournier insists that it should not be, and is not, a bar to marriage. The diagnostic hint will be of value in the choice of the proper homœopathic remedy in cases which some of our readers are sure to treat.

Clinical Society Transactions.

DR. A. K. CRAWFORD, SECRETARY.

JULY MEETING, 1887.

For the second time only during a period of almost eleven years did the Clinical Society fail to hold its regular monthly session on the evening of July 2. In lieu of the formal report and discussion which will be looked for in this issue of THE CLINIQUE we are limited to the publication of a few *Volunteer Papers.*

I. CLINICAL CASES.—BY DR. H. K. MACOMBER, OF PASADENA, CAL.—*Common salt in intermittent fever. Case* 1.—A girl of sixteen who had always suffered from nervous debility and who had been kept out of school for that reason, came to California in 1885. I found her suffering from an exaggerated nervous attack that was evidently hysterical. Her menstruation was painful, tardy and irregular. She was in bed, and had fits of laughing and crying, but especially of loquacity, in which she would talk incessantly for hours together until she was tired out and her conversation had become unintelligible. All the while she wanted to get out of bed and run away. It took three persons to keep her in bed. After the first three or four days, when she was in her most rational moments, she complained of a severe pain in the lower lumbar region, and the lumbar vertebræ appeared to be swollen and extremely sensitive.

On one occasion I visited her at midnight, because they reported and insisted upon it, that her spine was dislocated. I examined it and found great prominence but no luxation at the point already mentioned. She gradually improved in her physical condition until she was able to sit up most of the day and to ride out a little. But all this time she required the services of an attendant because of a propensity to stray off,

and also because she had acquired a trick of forgetting, or failing to identify those who were about her.

Throughout this part of her illness her pulse ranged above 100; but her temperature did not exceed 99½°. From the beginning she had had a most distressing nausea and loathing of food, which continued constantly with occasional vomiting for a whole year.

As the acute symptoms wore away and disappeared, the nausea only remaining, she developed an intermittent fever of the double quotidian type. The first, or morning chill, came at 7 A. M., lasted an hour, and was followed by fever and a free perspiration. The afternoon chill, which was milder in degree, came about 8 P. M., and ran through the same three stages as the other. Within a fortnight my treatment had the effect so to change the fever that the evening paroxysm was cut off, and the morning attack was mitigated. The gastric symptoms, however, were unchanged. During the next three months I gave her all the usual remedies, including *natrum mur.* 6 and 30, and quinine heroically, but without the least effect.

In looking about for help Dr. Ernest Alexander referred me to an article in Burt's Materia Medica, suggesting the use of common salt in tablespoonful doses in intermittent fever. I found it and followed the directions to give a single dose of the salt in a glass of hot water, upon an empty stomach, the patient having previously fasted twenty-four hours. She took it in the morning and retained it. The effect was immediate, and two months later there had been no return of the nausea, the fever or the sweats.

Case 2.—A gentlemen with a large family of children had been living in a malarial district where every member of his family had suffered seriously from attacks of malarial fever; came to Pasadena for a change of climate, and excepting in the case of his daughter of seventeen, with the result of breaking it up altogether. This girl was of a very nervous and excitable temperament, very averse to society and to exercise. The family had come away from home to get the benefit of a change of climate, and, as so many do, to "leave

the doctors behind." With this idea the daughter's case was neglected for a whole year, except that she took a great deal of quinine on their own prescription. The fever in her case was of the tertian type, but was occasionally interrupted for a week or so at a time by the quinine.

They finally consulted me and I proceeded to give the indicated remedies as carefully and faithfully as possible. This course was continued for two months, and to the exclusion of quinine, with intervals of relief of from five to eight days' duration. Otherwise nothing had been gained. I then prescribed the chloride of sodium as in Case 1, and with immediate and complete relief. I made no more visits, and six weeks later my patient reported that there had been no return of the complaint. There was no local, social, dietetic, mental or moral change that could possibly have accounted for the result.

Calendula in Phagedenic Ulceration.—Case. Mr. X., aged sixty, a merchant from Louisiana, had been an invalid for four years. He was of a rheumatic diathesis and had suffered more or less from sub-acute and chronic articular rheumatism. Four years before he consulted me an ulcer had formed over the middle portion of the spine of the left tibia. Despite the advice and treatment of many physicians, both in America and Europe, this ulceration had gradually increased in extent. It had eaten in between the two bones of the leg, and its surface was three or four inches broad, running around the calf of the leg on its outer side. It had become decidedly phagedenic, and was now making rapid progress in every direction. The discharge was very copious and offensive; some of the veins were opened by the corrosive action of the secretions, and at times there was a considerable venous hemorrhage. The muscles of the calf of the leg were finally destroyed, and the tendons were attacked by the destructive process, so that he could neither stand nor move his foot.

While this was progressing in such a fearful way, without the least relief or arrest from the treatment, he suffered much

pain of a rheumatic character in other parts, more especially in the hands and the shoulders. He was a very wealthy man and could command the very best of service and of care. His son and daughter and a trained nurse were unremitting in their attention. Before he sent for me they had literally obeyed the instructions of his former physicians, and every expedient had been tried to stop the destruction of tissue and to limit the lesion. Of late the patient himself had insisted that the ulceration and the discharge should be sealed up at any cost and regardless of consequences.

He was under my care for two months, during which time I had them use lotions of carbolic acid and glycerine, and had the sore washed every four hours. Internally he took attenuations of *nitric acid, rhus tox., kali jod., arsenicum alb., arsenicum jod., sulphur, hepar sulph.*, the various antipsorics and several other remedies, and, although the general condition improved under their use, no evident change was observed in the ulceration. Indeed, by this time it had involved and destroyed almost all of the tissues of the calf of the leg and of the ankle.

In this extremity I consulted "Helmuth's Surgery," in which I found so much stress placed upon the virtues of *Calendula* in similar cases that we began to use it at once. One teaspoonful of the strong tincture of *Calendula* to a teacupful of warm water made a lotion with which the part was bathed every four hours, the carbolic dressing being applied meanwhile as before. In forty-eight hours from the first *Calendula* bath the progress of the ulceration was arrested; granulation was established and went on uninterruptedly until the surface was covered, and the offensive discharge had ceased. In six weeks the form of the leg was natural again, and, although he had lost the use of the foot, he could stand and could get around with a cane. He had no more of the local trouble, and suffered no ill effect from the healing of the ulceration. Eighteen months later there had been no return of the trouble.

II. A CASE OF DIABETES MELLITUS COMPLICATED WITH MEASLES IN A CHILD OF THREE YEARS.—By N. C. Kemp, M. D., Chicago.—

Case.—I was called recently to visit a child who had the measles. While there, the mother said to me, pointing to a little boy playing about the floor: "that one has diabetes but he is better now."

I asked how long the child had had the diabetes, and she replied: "He has been ailing for five months, but the diagnosis of diabetes has only been made two months ago."

As the other child was already breaking out with the measles, it was useless to institute a quarantine, although the parents were advised of the danger to the child in having measles with the disease he was already suffering from. At the end of a week I was again called to the same family to find the baby coming down with measles, or at least he had many of the prodromic symptoms of measles with which all are familiar. During the past two months the child has had homœopathic treatment, which, of course, accounts for his growing better from the diabetes. His principal remedy had been *Zyzigium jambolatum.*

At this time I found him with a temperature of 103°, a pulse of 150, the urine was highly colored, with a specific gravity of 1032. Analysis at this time showed ten per cent of sugar. For the irritation of the mucous membrane of the eyes, nose and throat, thirst, quickened pulse, husky voice and nervous restlessness I gave *Aconite* 3 every hour, and advised a warm bath. In the evening of same day I found the temperature 102°. Continued the Aconite.

Second day.—No better; comatose, has less thirst and some perspiration. *Gelsemium* 3 every two hours, and three powders of *Apis mel.* as the urine had almost stopped.

Third day.—The patient is weaker and does not notice anything, nor call for water as he had done before. *Arsenicum alb.* was given in alternation with the *Gelsemium.*

Fourth day.—Red spots have appeared in the throat, but there is no eruption anywhere else. The urine is more free. The same remedies were continued.

I called early on the morning of the fifth day, hardly expecting to find my little patient alive: he was, however, but died an hour later.

I have thought this case to be an interesting one, particularly on account of the development of the diabetes at so early an age as that of three years. There had, previous to the time at which I saw the patient, been a very copious flow of urine, which contained a large per cent of sugar, but exactly how large it was I am unable to state.

III. Contra-indications for the method of gaseous enemata in the treatment of phthisis.—By Dr. B. S. Arnulphy, of the Paris Faculty, Chicago.—The employment of gaseous enemata in the treatment of phthisis is gaining ground with the profession and the public, and it would be childish to deny the powerful claims which it has on the attention of any medical man willing to help his fellow creatures. But while no one but a narrow sectarian would willfully close his eyes to the favorable effects of the method when carefully practiced, too few words of warning have been heard as yet, in the universal concert of praise and admiration which has greeted the method, with a view to pointing out the dangers that might possibly result from its use at the hands of inexperienced practitioners. It must be said to the praise of the originator of the method, Dr. Bergeon, that he has perceived the gap and endeavored to bridge it over. In a valuable periodical edited in Paris, by Prof. Verneuil,* Dr. Bergeon has an article on the counter-indications for his method, the substance of which it is my object to analyze and to comment on in the present paper. This I will do with an impartial but independent spirit.

My personal experience with the method has been as yet very limited, but I have nevertheless been able to form an opinion, especially from the reports of many professional friends in Europe.

According to Chantemesse this method of treatment is most favorable in the common chronic forms of phthisis with limited lesions and slight fever.

A fact worth noticing is that in the case of some women, the first symptom of amelioration was the return of the

*Etudes Experimentales et Cliniques sur la Tuberculose, Masson, Paris, 1887.

period, which had been suppressed for some months or even years.

A comparative examination of the cases that have been published, as well as of those that have otherwise come to my knowledge, shows that in general the patients submitted to the gaseous enemata have experienced a considerable relief, the chief features of which are a speedy diminution of the cough and oppression, better sleep, marked change in the expectoration both in quality and quantity, increase of appetite and a steady increase also in the weight of the body. The fever is often lessened but not always.

The physical signs are only slowly modified, but they all point to elimination of the tuberculous products and evident amelioration of the pulmonary lesions.

On the other hand we hear from time to time rather discouraging statements.

Dr. Lecomte, of Paris, reports seven unfavorable cases out of twelve. Drs. Spillman & Parisot, of Nancy, are unable to make any satisfactory reports. They have noticed in their patients a very marked hypnotic effect, which they attribute to the carbonic acid gas.

It is reported by Dr. Bondet, of Lyons, that out of twelve patients six have been unable to bear the treatment on account of sharp intestinal pains. Dr. Poullet, of Lyons, states that out of three cases which he observed two proved unfavorable to the method.

Such contradictory results are suggestive of certain limitations in the proper application of the method which every practitioner unwilling to grope in the dark ought to be aware of.

As to the *corpus delicti*, that is the bacillus tuberculosus, whatever part it really plays in the drama, it is acknowledged by all observers that it does not seem to be materially affected. It continues to be found in the sputa in all stages of the treatment.

Of course it is claimed that being no more in contact with a pulmonary lesion, their virulence is checked, while others will admit that they are thrown into a state of inertia.

The fact is that the bacillus sneers at the numerous weapons that have been hurled at its head. And now, while its positions are turned, and it is assaulted in the rear, it will only condescend to be rocked to sleep. One might even entertain the suspicion that it slumbers on with one eye open; for as soon as vigilance slackens, it awakens ready for mischief again. It is true that another of these essayists, and a distinguished observer, Mr. Gosselin, is hopeful that the tenacious microbe might be kept on in a slumbering and starving diet so long that it will finally drop into consumption itself and crumble away, but as yet there is not the slightest proof of such a desirable termination of the contest. So the only course to take is to carry the treatment steadily on, even a long time after a cure seems to have been effected.

One application of the method strikes me as recommending itself to the homœopathic practitioner. I refer to the vivifying exhilaration which follows the use of gaseous enemata in the favorable cases. I think it is mainly due to the specific action of the sulphurous compound employed, and homœopathists know by experience what unexpected and astonishing effects some drugs will display after an occasional dose of sulphur given in a high potency. It sometimes seems as if a wondrous spell had dissipated the sluggishness of reaction against which not even the best selected remedy would accomplish anything. Why should not the homœopathic practitioner avail himself of the prompting and quickening effect thus elicited in the deep fountains of life, with a view to bring his resources to bear upon the renovated receptivity of the organism?

Thus, I am convinced that really permanent cures could be effected, showing that truth is ever homogeneous to truth though its chain be sometimes woven of strange links, and that no spark of it that flashes in the world of knowledge is antagonistic to another, but, on the contrary, virtually serves to intensify and to brighten the torch that enlightens our path.

I will now briefly examine the principal counter-indications of the method, following the order adopted by Dr. Bergeon, himself.

1. Contra-indications found in the condition of the respiratory organs.—It would be a wise bit of practice to use gaseous enemata with the greatest care whenever the patients exhibit any tendency to hemoptysis and even not to attempt it at all when the latter assumes the active hemorrhagic form. No doubt that gaseous enemata by modifying the respiratory rhythm, induces a certain degree of congestion of the lungs. This effect is especially pronounced when a sulphurous agent is employed. Bergeon readily owns that he has oftentimes been compelled to replace the sulphurous waters with some alkaline waters of complex mineralization.

In fact, it is a very common thing in the sulphurous balneary stations to observe hemoptysis directly due to the use of the water, the primary effect of which is to congest the capillaries of the lungs; although Dr. Bergeon claims that the action of the sulphuric hydrogen is very different and almost innocuous when absorbed through the intestines. I would not readily trust his assertion, I would only use sulphurous water with the utmost discretion and vigilance. Under such condition, indeed, I would suggest the use of eucalyptol. Quite recently Dr. Lecomte published some cases observed in the service of Dr. Dujardin-Beaumetz. Out of twelve cases, five only exhibited favorable results; in the remaining cases, painful colics, diarrhœa and repeated hemoptysis, one of which was fatal, were observed. Sulpho-carbonated water was used in this last instance.

M. de la Roche says there is a decided contra-indication when both lungs are filled with tubercles, a pronounced dyspnœa being present. As in this case, elimination of carbonic acid through the lungs being almost impossible, the gas only increases the blood-pressure and induces congestion of the lungs. And Dr. de la Roche cites the case of a patient presenting the condition above described, who died with pulmonary congestion two days after three injections had been tried. The patient was already in an almost hopeless state. Dr. Morel has also observed the same contra-indication, and he states that no therapeutical results can be expected in those cases, and, moreover, that patients will suffer colic pains

due to the retention or accumulation of gas into the bowels. So that, when examining patients, it is not so much the extent of the lesions that have to be considered, as that of what is left of sound lung tissue through which a sufficient elimination of the injected gas can be hoped for.

It will be readily understood that the least communication between the pleura and the lung tissue, excavated or even encysted, evidently constitues a formal contra-indication for these injections.

2. Contra-indications arising from the circulatory apparatus.

Prominent among the contra-indications of this class stand the aneurysmal dilatations of the thoracic blood-vessels, as any additional blood-pressure may prove fatal.

Dr. Bergeon, when asked in consultation for two such cases, absolutely refused to interfere. However, cardiac diseases in general he holds to be of no account in the application of the method.

"Many times, says he, I have had to treat phthisical, catarrhal, asthmatic patients affected with cardiac complications, and I have never met with any accident, nor detected symptoms which could lead me to the conclusion that heart diseases contra-indicate gaseous enemeta."

He even cites the case, which he observed in consultation with Dr. Morel, of a patient affected with chronic bronchitis, emphysema, asthma and ascites, in which the gaseous injections gave relief in spite of the circulatory troubles. However, no real good was done in that case, for the patient died a few days afterward.

Here again I would listen to a sense of medical instinct which can not be safely disregarded, and refrain from using gaseous injections in heart diseases, whenever the circulation is seriously impaired.

It can not be good practice to bring about an excess of pressure in the venous system and the right heart already over distended, and to crowd the lung capilliaries with an additional quantity of carbonic gas, and on no account would I undertake such an illogical experiment.

There is another condition of the circulatory system which requires the greatest prudence in using the method—namely, when the tunics of the blood vessels are affected with atheroma. I need not insist any more on that subject.

3. Counter-indications arising from the digestive organs.

It is claimed by Bergeon, Morel, Chantemesse and many other physicians, who have been experimenting with the method, that in the majority of cases the gaseous enemata are well tolerated by the bowels when the carbonic acid is pure, the medicinal agent well selected, and especially when proper attention is given lest any atmospheric air should be injected. Nevertheless a certain number of cases are on record showing that various resulting disorders of both the stomach and the bowels are by no means an uncommon feature of the treatment. A tendency to emesis is very frequently observed, and some patients will have to go through that unpleasant process after every injection. This may prove a serious drawback in some instances, and may even necessitate the suspension of the treatment.

I know of two patients with whom the injections of three or four litres of gas brought about a peculiar state of fullness of the stomach attended with giddiness, together with a strong tendency to sleep that was liable to last for many hours. The injections had to be suspended, as, after two months' treatment, they were followed with dubious results for the local lesions, the patients had lapsed into a state of nervous exhaustion and despondency, due most likely to the unusually deep sympathetic reaction which the presence of the gas elicited through the abdominal plexi.

Dr. Bergeon cites a very typical case of momentary intoler ance which is well worth mentioning. Here is a translation of it: "Mr. X, fifty-two years, an asthmatic for more than fifteen years, had suffered intolerably during the last three years. He comes to employ the method of gaseous enemata, and immediately feels an immense relief. He is able to sleep in his bed, which he had not been able to do for years, and soon afterward he proclaimed himself cured. Unfortunately

some weeks later a stubborn constipation set in. The patient, who had lived seven years in China and Indo-China, is affected with an organic alteration of the liver and pretty large hemorrhoids. The old trouble comes back again, and when the injection is given hardly a pint of gas finds admission, and not even that much is retained. Called in at that moment, I came to the conclusion that the injection was impossible. In spite of the patient changing his position several times, and notwithstanding his energetic efforts, not a particle of gas could penetrate. On the theory of a mechanical obstacle two doses of a drastic purgative were given for two days in succession without any avail. The gas is still repulsed and unabsorbed. Meanwhile his asthma became very troublesome again, and the patient insisted that the treatment which had afforded him such relief should be tried once more. Yielding to his entreaties I made a new attempt, the patient being this time in a standing position. But in spite of our united efforts the gas oozed out, and I was compelled to give up any further attempt, as the patient was covered with cold perspiration and fainted away.

"Thinking then that this lack of absorption might be induced by the liver complaint, producing, either through reflex action or through a modification of the intestinal secretions, a paresis of the mucous membrane of the bowels, I gave the patient Vichy water, and had some mercury and belladonna pomatum smeared on the liver region, large poultices being at the same time applied on the abdomen. Forty-four hours afterward every complication had disappeared; the former medication was resorted to, and the result effected was as good as before."

4. *Difficulties arising from a defective application of the method.*—I have very little to say on that chapter as regards the various kinds of apparatus in use for the administration of the gaseous injections, as every physician may be easily supplied with the necessary implements, the handling of which requires more care than skill. The only real difficulty lies in the choice and in the quality of the medic-

inal agent. Very few of the latter will be found not to irritate the mucous membrane and not to cause pain. Eucalyptol and carbon sulphide are well tolerated in general, but the mineral waters naturally rich with sulphuretted hydrogen are decidedly preferable. Bergeon's protracted experience, as well as the preference manifested by Chantemesse, Cornil, Dujardiu-Beaumetz, are sure indicators of the fact. Such broad hints from the men who have done the most for the diffusion of the new method ought not to be overlooked. There is no lack of mineral sulphur waters in this country sufficient to supply all the wants of the profession, such as Blue Lick, Ypsilanti, Mount Clemens, Red Sulphur Springs, etc. If I must express a preference it would be in favor of the Blue Lick water, as its taste as well as its composition reminds me of Eaux-Bonnes more than any that I have tried. But it is obvious that in order to derive all the possible benefit from mineral waters they should be used only when in a perfect state of preservation, which is not always easy to obtain.

Therefore the legitimate and all important conclusion to be drawn from the above considerations is that, before reporting to the method two precautions have to be observed, namely, a careful examination of the patient and a discriminate choice of the medicinal agent to be employed.

As to the real value of the gaseous enemata in the cure of tuberculosis, it is not time as yet to pronounce.

No precipitate or "a priori" judgment should be passed on a method, the chief characteristic of which is to proceed "a posteriori." It seems only fair, as it seems to give it the benefit of the principle on which it rests. Be it so. But let us watch and wait.

Meanwhile, if I may venture an opinion, I trust to be in keeping with clinical facts when I state that the method, though awkward in itself, is scientifically correct, and one full of promise, although it is not of such wide application as has been claimed for it by some of our enthusiastic confréres.

Aside from the difficulties of the manipulation, and the choice of the medicinal agent, and aside from certain peculiar

cases of hyperæsthesia or of paresis of the intestines, where no gas will either be tolerated or retained, many instances will be found, through accurate examinations of the patients, wherein decided contra-indications arising from the respiratory or from the circulatory organs may be detected. So that it would be a gross mistake to submit every tuberculous patient indiscriminately to the same treatment without taking into account the wide differences of type, reaction and the lesions inherent to each particular case; a mistake, the consequences of which would certainly be an increased danger for the ill-fated patients, and which would soon lead to such results as would shake the confidence of the public, if not of the profession.

IV. Notes on the clinical value of Reflex Hepatic Symptoms.—By C. E. Laning, M. D., of Chicago.—Although this class of symptoms are the ones most frequently met with in diseases of the liver, still, their importance as guides to diagnosis and treatment are very much overlooked. Very few physicians realize the intimate relationship which exists between the liver and nose. This connection is largely through the vaso-motor fibers of the sympathetic system. If the hepatic circulation be for any length of time deranged in a certain manner, the nose indicates it. The vaso-motor filaments which control the nasal circulation are thrown into a paretic state, the capillaries become distended and relaxed without the power of contracting, or at least, only to a slight degree. As a result, the nose becomes red, hyperæmic, in short it represents the condition of the liver so far as its vascularity is concerned. While I can not make the assertion positively, my observation of such cases leads me to believe that when the hyperæmia of the nose becomes apparent, that it is reflexly due to a similar condition of the capillaries of the hepatic artery. When there is portal stasis or hyperæmia, the nasal mucous membrane is very liable to be affected in a similar manner, *i. e.*, the veins distributed to that membrane are relaxed, and the current of blood passes through them tardily. As a result, there occurs what takes place in any mucous membrane in

which the circulation has become deranged in the above manner, viz.: abnormal secretion. Sometimes the secretion is more or less fluid so that there is a slight discharge from the nose. As a rule, however, a dry coryza is developed, the secretions being thick and tenacious, plugging up the nose, if not frequently removed, to such a degree as to render breathing through the nostrils impossible. Such patients almost invariably awaken in the morning with the nose completely stopped up. That a certain amount of trophic disturbance reflexly occurs in these cases can hardly be doubted, for while derangements of the circulation of a mucous membrane almost certainly will change the quality or quantity of its secretions, still the many changes which take place in the nasal mucous membrane, as the result of certain hepatic lesions, can not be accounted for entirely by circulatory disturbances. Many times the nasal secretion is greenish in color, and tough and elastic, almost like plugs of india rubber, sometimes dark, almost blackish in appearance with slight cohesive properties, crumbling to pieces easily, again they are yellowish, or white. These changes can only be looked upon as resulting from a modified action of the secreting fibers of the synpathetic. Cracks in the corners of the nostrils sometimes occur, which are disagreeable and often quite painful. Ulceration of the Schneiderian membrane at times occurs, which is largely trophic in character, and similar in nature to the so-called canker sores which appear upon the mucous membrane of the buccal cavity. The vaso-moter reflexes are very decided in the case of certain forms of liver disease. Every one is familiar with the burning of the palms of the hands and soles of the feet in hepatic difficulties; these symptoms are almost exclusively due to a temporary paresis of certain vaso-motor fibers. Of the same nature, though of less general occurrence, is the more or less decided heat of the entire surface of the body. While the burnings of the soles of the feet are more liable to take place at night the burning of the body generally, is most usually observed in the morning. Cool water on the surface of the body feels grateful and refreshing at such times. As possibly being a guide to other things (it may be

simply owing to the period of digestion), the burning or heat of the skin in general, and that of the feet and hands is more marked at certain stated intervals in each instance. Thus as has been mentioned the feet are worse at night, the general heat in the morning, and that of the hands more especially in the middle of the day. Whether this rule holds good in all cases, or in the majority of them indeed, I can not say, as I can find nothing on the subject in any work that I have consulted. My own observation has shown me that in almost all of the cases in which I have carefully noted it, the above order has been true. As bearing upon such cases and helping to unravel them, I have further observed that in almost all patients who complained of one or more of the sensations of heat, they also had a *bitter* taste in the mouth more or less constant. I will note only this in passing to make use of it further on. Let it be remembered that the *bitter* taste is due to the taurocholic acid set free in the circulation, and *not* to the bile *pigment* which has little or no taste.

While hepatic derangement as a rule tends to make the patient listless, stupid and sleepy, it on the other hand has the reverse effect at times. I have seen cases of most persistent and intractable insomnia due to hepatic lesions, cases in which remedies had no effect whatever until directed toward the liver. In patients so affected, the vaso-motor system is largely, proximately, at fault. If such a case be watched carefully, well marked symptoms of spasmodic or almost continuous cerebral hyperæmia will be detected. There is a feeling of more or less fullness in the frontal region and while the brain is active, it is in an automatic way, so to speak, *i. e.*, the person can not stop thinking, neither can he follow out successfully any connected train of thought; while the brain seems determined to think it will not follow any special theme of thought which may be voluntarily given it. Evidently the cortical capillaries of the brain are involved, and while their undue dilatation gives rise to little or no pain, the patient, nevertheless, can not sleep. Often we find patients who are troubled with a headache due to hyperæmia or congestion, yet who can go to sleep more or less readily,

indeed are inclined to fall asleep in spite of the pain. In these cases the difficulty is meningial, and the brain is not active, but as a rule dull and sluggish. It is easily understood how this occurs, for while the meninges owing to their nervous supply (the fifth) are exceedingly sensitive, the very fact of their being unduly supplied with blood tends to diminish the supply to the brain, and hence the patient is drowsy and goes to sleep in spite of the pain. This is a symptom I have relied upon for a long while in determining whether (when there was evidence of hyperæmia within the cranium) it was principally confined to the arteries of the meninges or to those of the cerebral cortex.

Hepatic insomnia is more common than most physicians realize. It is of course in patients given to much brain work that sleeplessness most frequently occurs, and in this class of patients their habits are such as to induce functional derangement of the liver. Patients having this cerebral reflex present almost always have one or both of the following symptoms: A lack of appetite, though when sitting down to the table food tastes good and they often eat a large meal, and a striking peculiarity in such instances is, that after a hearty meal they feel none of the fullness or distention which generally follows a large meal. Indeed, they feel almost or quite as empty as before they ate, an unsatisfied, longing feeling remains as if something was yet needed to "go to the spot." Such patients will feel quite well for some time after a meal, but in from half an hour to an hour and a half they begin to feel dull and heavy about the eyes, dead tired and sleepy, but can't sleep, this feeling of sleepiness soon passes off and the brain becomes active and restless, the patient is restless, wants to change place rapidly, feels better in a carriage being drawn rapidly, or on a fast moving train, in short wants rapid passive motion, but does not desire to make any exertion himself.

In connection with this hepatic insomnia there is almost always a *smooth, whitish* coating on the tongue, and an exceedingly *bitter* taste in the mouth in the morning. I emphasize these points, because where there is a rough yellowish, or even

a whitish, coat rough and furry, and with all sorts of *bad* tastes rather than bitter; the patient is more likely to be dull and stupid, and prone to excessive sleepiness, rather than the reverse.

A sensation which sometimes accompanies portal congestion is a sense of oppression, approaching a suffocative feeling, with a desire for frequent long breaths of a sighing nature. No matter how much of an effort to expand the lungs there be, it seems as if they could not be filled, and, when expanded to their utmost, there still remains an oppressed feeling and a desire for more air. I have seen such cases mistaken, so far as diagnosis was concerned, for some lung difficulty or affection of the diaphragm, and have known Ignatia to be prescribed for the sighing respiration. It is needless to comment on the error in both directions.

This desire for a long, deep breath, together with the sensation as if the lungs were not fully expanded, is caused in a two or a three-fold manner. In the first place the liver, being somewhat enlarged as a result of the venous stasis, presses upon the under surface of the diaphragm more than is natural. It will be remembered that the phrenic nerves are distributed to the under surface of the diaphragm, consequently they are directly irritated, and hence tend to cause the kind of respirations referred to. The flow of the blood through the portal system into the hepatic veins, and hence into the inferior cava, and then into the right auricle, is not regular and steady as when a normal condition exists in the chylopoietic viscera. As a consequence the blood, passing to the heart from the source just mentioned, is overloaded with the products of tissue metamorphoses, including, of course, carbonic acid gas. The pulmonary filaments of the vagus are irritated by carbonic acid gas, and cause largely the desire to inspire. If it be present in the lungs in abnormal quantities at irregular intervals, as it is in some cases of hepatic portal congestion, respirations of a prolonged, sighing, unsatisfactory character must take place. Often patients having the respiratory symptom referred to have a peculiar affection of the sight—a sort of obscuration, dimming, as of looking through

smoke or mist. I believe this to be due largely to stasis of blood in the veins of the retinal or optic nerves, or both. While a connection direct—and mechanical, as it might be termed—can be traced between portal stasis and a similar condition of the gastric veins, the hemorrhoidal, etc., it must not be thought that the stasis which occurs in the nose or eyes or brain can be explained in a like manner, or that they need such explanation. It must be remembered that the derangement in the portal system is primarily due to a lesion of certain nerve centres, and that as the lesion affects one set or another, or the same series in a difierent manner, different symptoms arise. Hence, the nature and location of the initial nervous lesion determines the character not only of the direct hepatic symptoms, but also those which, while they are not, strictly speaking, reflex, are concomitants, and must be taken into consideration, both in making a diagnosis and a prescri tion.

Occasionally, if examination be made, there will be observed extending across the upper border of the right hypochondrium, epigastrium and left hypochondrium, a large number of small veins, so distended as to appear like a "snarl" of miniature snakes, and hence known as the *caput medusae*. These veins are connected with the portal system, and therefore, when distended in the manner just spoken of, indicate not necessarily any lesion outside of the one which gives rise to the portal stasis, which is always very decided when the *caput medusae* is present. It is to be noted that stasis of various parts of the venous system is liable to occur when this condition exists in the portal vein.

Without going any further into the subject at present, or giving any cases in detail, I will sum up a few of the points in regard to treatment.

When the *caput medusae* is present, the remedies will almost certainly be found among the following: *leptandria, aloes, hepar sulphur or strychnia.*

If *leptandria*, there will be present as a result of oozing of blood through the radicals of the portal vein, dark stools, the color of which is due to the presence of partly decomposed blood.

When *aloes* is indicated, there will be a great deal of congestion of the hæmorrhoidal veins, with most probably the existence of internal or external piles. There may not be present the characteristic stools of this drug in such cases, but if there be present the objective symptoms first mentioned and hæmorrhoidal symptoms, together with a *feeling of fullness and heat in the region of the vertex and occiput*, this drug may be given with the best results. This head symptom is a frequent accompaniment of pelvic congestion, and when it is one of the two just mentioned *aloes* will almost invariably relieve it.

Hepar sulphur is a great hepatic remedy, but is not used so often as it might be to advantage. The group, or rather *one* group of symptoms, calling for it is as follows: *Caput medusae*, light or clay colored stools, quite offensive in odor, the tongue is coated a dirty white color, smooth rather than rough, and quite moist, reminding one strongly in this respect of mercurius. There is a villainous taste in the mouth, and a similar odor comes from it. Add to the above an almost constant desire for acids, or something juicy and refreshing or biting, as horse radish, together with the fact that a meal gives little or no satisfaction in the way of removing the craving, that the nose is filled with dry secretions which return almost as fast as they can be removed, and we have a condition which *hepar* will seldom fail to cure.

Strychnia, in preference to Nux vomica, will be found curative when there is extreme portal congestion, accompanied by smooth white coating on the tongue which is rather dry, and has an intensely bitter taste. There is a feeling of weakness and emptiness at the pit of the stomach, at times a canine hunger, and again no desire for food whatever. The patient generally feels much better for an hour or so after eating. There often accompanies these symptoms a decided hyperæmia of the arteries of the cortex cerebri, causing the most obstinate insomnia. If the patient sleeps at all it is in a restless, unrefreshing sleep, and he wakes in the morning feeling more tired than at bedtime, he feels faint and gone at the stomach and the skin of the whole body feels hot and uncom-

fortable. The patient is irritable and desires to be alone. He may or may not have the constipation of strychnia, the character of which is too well known to need further mention.

If the nose is red, swollen and shiny, it is a strong indication for hepar. If the stasis within the Schneiderian membrane is just sufficient to give rise to a sensation of fullness within the nose as if it was being filled with secretions without the latter being true, look for an excess of urea and unoxidized uric acid in the urine. If with this urine there are secreted from the nose tough, greenish, elastic plugs; a ravenous appetite, wants to eat all the time, or, on the other hand, there is much gas and sudden satiety on taking a few mouthfuls, lycopodium is the remedy.

When there is present a *sensation as if the lungs could not be fully distended, with a frequent desire to take long breaths, a bitter taste in the mouth most all the time, greatly exaggerated or increased in fifteen minutes to half an hour after taking the least bit of food no matter how simple, even water*, the tongue having a smooth yellowish coating, and the *lips being parched and dry, Bryonia* is strongly indicated. Of course, evidence of its action upon the greater and lesser splanchnics in the shape of large, hard, dry stools will most probably be present. If in addition there is a dull, frontal headache and *aching of the eyeballs*, there can be no mistake in regard to the remedy.

It would be interesting at least to me to go into detail in regard to the nature of the pathological conditions, back of the various symptoms mentioned, and locate the primary and secondary lesions, but it is not permissible or practical in a paper of this scope. It seems to me it must be plain to all that the nervous system is where the primary lesions are located, and where the remedies exert their beneficial action. Thus, while there may be present portal stasis in a large number of cases, yet the symptoms of each case may vary to quite an extent resembling one another only as one man does another, but by no means being indentical.

A few other remedies I feel I must at least give a passing notice. When there are cracks in the corner of the nostrils, natrum muriaticum, nitric acid, antimonium crudum, sepia and chamomilla are the remedies to select from.

If, in connection with this, the skin around the root of the finger nails is reddened and sore and roughened, natrum muriaticum is the remedy nine times out of ten. I should like, as I have already said, to trace out the tissues involved and the physiological action of the drugs mentioned, but will be obliged to leave it for some future paper.

V. ENURESIS CURED BY A GOOD SCOLDING.—BY DR. B. L. REYNOLDS.—Some of the most trying cases that have come under my professional care in a charitable institution in this city were cases of enuresis occurring in boys and girls of from four to ten years. After having prescribed the usual remedies without effect, I resorted to a kind of metaphysical treatment with excellent results. One boy of nine had wet the bed every night for six months. The flow of urine was so free that it ran through the bedding to the floor. I was finally satisfied that the mischief came from his not getting up to the vessel because he was too lazy to do so. He had taken *apis*, *pulsatilla*, *belladonna*, etc, but still the trouble went on. I knew there was no remedy for the laziness but to make him attend to it for himself, and so, by my instructions, he was required to sit up on a chair all the night through with his clothes on. This was repeated for three consecutive nights without any mishap, and then he was given his choice of going to bed at the proper time and getting up when he needed to, or of sitting up and doing the same thing. There was no further trouble with the case so long as he staid in the institution, which was for three or four months.

In the case of a number of girls, one of whom was twelve years old, I have shamed them out of it, and cured it without giving them any remedy whatever. To the girl just alluded to, and who, as her mother said, had always had this infirmity, I expressed my disgust that a girl of her age could be so lazy and so filthy as to wet the bed and then lie in it for the rest of the night, when it was such an easy matter to get up, or to ask some of her mates to awaken her for that purpose. I told her that if she would do this for a few nights the habit would surely be broken, and that I never wanted to hear of it again! After a very few nights the thing ended, and now in the two years that have intervened it has never returned.

In some of the smaller children, say of from four to seven years, I have required of the older boys in the dormitory to arouse the younger ones and to get them up on the vessel, whether they wanted to or not, and, with them, the old habit was broken in this way. In carrying out this method it made

no difference how many times the larger ones were out of bed, the rule was always to pull out the little ones for the same purpose. In a little while there were no more cases of the kind, and now, instead of always having from two to ten children to treat for this infirmity, such cases are very rare, and we go for months at a time without a single one.

I have observed that whether the trouble is at night or during the day, or both, the complaint is three or four times more frequent among boys than girls. In the case of two boys, where the discharges occurred both during the day and the night, I was satisfied that the day trouble was from pure laziness. They were about five years old, and simply would not leave their play to go to the closet. Their clothes were always dripping, and they had to be changed every hour in the day, or else go wet. Their buttocks were excoriated, and they were disgusting objects, unfit for the society of the other children. I took them into the dispensary, and told them what should be done if I found them in that condition the next day; showed them the scalpel, and said that it was the instrument that would surely be used in their case if I found that they had wet their clothing again. Naturally enough they were badly frightened, for there was no nonsense about it, and they knew that I always kept my word. From that time there was no further trouble with them.

In the cases that I have cited the enuresis was not a matter of mere imitation, for, almost without exception, the children had formed the habit at home, and before they came to us. They had never been taught that it was avoidable or dirty, or that a little decent training and resolution would prevent it altogether. And I am persuaded that this is a lesson which many mothers in the better classes of society, and many physicians, too, for that matter, have never yet learned. No doubt there is a large proportion of cases of enuresis, not only among children, but in hysterical subjects also, that might be cured in a similar way better and more promptly than by the use of remedies.

Miscellaneous Items.

Prof. Hall is taking and enjoying a holiday in western New York.——Prof. Leavitt's correct address is 148 Thirty-seventh Street, and not as stated in our last issue.——Dr. Anna Warren has located in Chattanooga, Tenn.——The Vermont Homœopathic Society has adopted the report of a special committee concerning the proposition to obtain a charter for a medical college from its State Legislature, in which is the following very sensible item: "The aim of this Society is to elevate the standard of Homœopathy, and this is best accomplished through the most thorough and liberal medical education. Such medical education can only be obtained where the clinical facilities are far more abundant than they possibly can be in a sparsely settled State like Vermont."—— The meeting of the American Institute at Saratoga, under the leadership of President Ormes and his worthy aids, was a decided success. The sectional plan worked well, and everybody was pleased with the outcome. The next session will be held at Niagara Falls, with Dr. A. C. Cowperthwait for president.——During the meeting of the Institute our Society of Medical Editors had several sessions, with an address by Dr. Bushrod W. James, of the *Hahnemannian Monthly;* and the Inter-Collegiate committee rehearsed several acts in the drama of "A Happy Family."——Dr. Stevens is off on a trip to California.——Prof. Fellows is working like a soda-fountain *attache* during the dog days, to help us through until "the boys" come home.——The CLINIQUE offers a prize for the best description of the "rectal fever" as it affects physicians who cannot thrive without quacking it.——"Mental Gymnastics" is the title of a very interesting and useful book on the culture of the memory, by our talented friend and neighbor, Dr. Adam Miller. It has already passed to a fifth edition. Its contents may be mastered in a month by the busiest physician, and the book can be had by addressing Dr. A. Miller, 45 Elizabeth Street, Chicago.——"Experiences with Anti-septic Surgery," a reprint from the Peoria *Medical Monthly*, is an excellent and very practical paper by Dr. Geo. N. Kreider, of the Illinois State Board of Health.——The graduates of the "Old Hahnemann" living in Minnesota will please send their name and address to Alex. Donald, M. D., 78 East Seventh Street, St. Paul. Dr. Donald is the secretary of the Alumni Association of the Northwest, which was organized in May last with twenty-three charter members.